Muscular System Worksheet Answer Key PDF

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Part 1: Building a Foundation

Which type of muscle is voluntary and striated?

undefined. Smooth
undefined. Cardiac
undefined. Skeletal ✓
undefined. None of the above

The correct answer is skeletal muscle, which is both voluntary and striated.

Which of the following are functions of the muscular system?

undefined. Movement ✓
undefined. Digestion ✓
undefined. Heat production ✓
undefined. Blood filtration

The correct answers include movement, digestion, and heat production.

Describe the role of tendons in the muscular system.

The role of tendons is to connect muscles to bones, allowing for movement.

List the three types of muscles and provide one characteristic of each.

1. Skeletal muscle
Voluntary

2. Cardiac muscle
Involuntary and striated

3. Smooth muscle

Involuntary and non-striated

The three types of muscles are skeletal (voluntary), cardiac (involuntary and striated), and smooth (involuntary and non-striated).

Part 2: Understanding and Interpretation

How do smooth muscles differ from skeletal muscles in terms of control?

undefined. Smooth muscles are voluntary, skeletal muscles are involuntary.

undefined. Both are voluntary.

undefined. Smooth muscles are involuntary, skeletal muscles are voluntary. ✓

undefined. Both are involuntary.

Smooth muscles are involuntary, while skeletal muscles are voluntary.

Which of the following statements about muscle contraction are true?

undefined. ATP is not required for muscle contraction.

undefined. Actin and myosin filaments slide past each other. ✓

undefined. Muscle contraction is initiated by neurotransmitters. ✓

undefined. Muscles can contract without nerve signals.

The true statements include that actin and myosin filaments slide past each other and that muscle contraction is initiated by neurotransmitters.

Explain how the neuromuscular junction facilitates muscle contraction.

The neuromuscular junction is where the motor neuron communicates with the muscle fiber, triggering contraction.

Part 3: Application and Analysis

Which muscle type would be primarily involved in the digestion process?

undefined. Skeletal

undefined. Cardiac
undefined. Smooth ✓
undefined. None of the above

The correct answer is smooth muscle, which is primarily involved in digestion.

During exercise, which of the following adaptations occur in muscles?

undefined. Hypertrophy ✓
undefined. Atrophy
undefined. Increased ATP production ✓
undefined. Decreased blood supply

The correct adaptations include hypertrophy and increased ATP production.

Describe a real-world scenario where the sliding filament theory is demonstrated.

A real-world scenario could be lifting weights, where muscle fibers contract and shorten.

Part 4: Evaluation and Creation

What is the primary reason for muscle fatigue during prolonged exercise?

undefined. Lack of oxygen
undefined. Depletion of ATP ✓
undefined. ExcessIVE calcium
undefined. Increased neurotransmitter release

The primary reason for muscle fatigue is the depletion of ATP.

Analyze the following scenarios and identify which could lead to muscle atrophy:

undefined. Regular resistance training
undefined. ProlongED bed rest ✓
undefined. Immobilization of a limb ✓
undefined. Consistent aerobic exercise

The scenarios that could lead to muscle atrophy include prolonged bed rest and immobilization of a limb.

Compare and contrast the roles of actin and myosin in muscle contraction.

Actin and myosin work together to facilitate muscle contraction, with actin being the thin filament and myosin the thick filament.

Which intervention would most effectively prevent muscle atrophy in an immobilized limb?

undefined. Increasing protein intake

undefined. Electrical muscle stimulation ✓

undefined. Applying heat packs

undefined. Taking muscle relaxants

The most effective intervention is electrical muscle stimulation.

Propose strategies to enhance muscle recovery post-exercise:

undefined. Adequate hydration ✓

undefined. Sleep and rest ✓

undefined. StretchING and cooling down ✓

undefined. Consuming high-fat meals

Strategies include adequate hydration, sleep and rest, and stretching and cooling down.

Design a weekly exercise plan that targets all major muscle groups and promotes overall muscle health. Include types of exercises and their benefits.

A well-rounded exercise plan should include strength training, cardio, and flexibility exercises.